

Ongoing Review and Update of Circular DEQ-12B: Nutrient Standards Variances

Nutrient Work Group Meeting #2

Helena, MT

January 24, 2017



**DEPARTMENT CIRCULAR
DEQ-12A**

Montana Base Numeric Nutrient Standards



**DEPARTMENT CIRCULAR
DEQ-12B**

Nutrient Standards Variances

<http://deq.mt.gov/Water/WQPB/Standards>

Timeline: Completing Nutrient Standards Variances Triennial Review

- 9/14/2016: Kick-off Nutrient Work Group Meeting. **Complete**
- Nov/Dec 2016: DEQ evaluated ways to reconcile MT's statute and variance rules with EPA's 2015 variances requirements at 40 CFR 131.14.
- Jan 24, 2017: Nutrient Work Group meeting #2: Present findings and potential next steps for variance process for Nutrient Work Group to consider.
- February 2017: Nutrient Work Group meeting #3. Continue dialog. Address concerns and issues arising from meeting #2.
- Winter/early Spring 2017: Meetings (number: TBD) to work through details and address ongoing variance issues with the Nutrient Work Group.
- April 2017: *Target* completion for Nutrient Work Group meetings, updates to Circular DEQ-12B, and Implementation Guidance; start 45 day public comment period, followed by public hearing. Technical materials available to public ≥ 30 days before hearing. Respond to comments, finalize rules, then Director's signature. Submit final rules to EPA for review.
- July 1, 2017: Hard deadline for Director's signature, following completion of Circular DEQ-12B review, Nutrient Work Group input, public comment period, hearing, response to comments, and rule finalization. *45 day comment period must start around May 1, 2017 to meet this deadline.*

Variance Laws (state and federal)

- DEQ's variance rules sunset July 1, 2017. Rules submitted by DEQ will be reviewed by EPA in light of the CWA and its rules. EPA updated its CWA variance rules in 2015.
- Montana has 3 discharger variance groups:
 1. ≥ 1 MGD
 2. < 1 MGD
 3. Lagoons
- In discussions with EPA, several areas have been the focus of consideration. Key areas are:
 1. Identify the highest attainable condition (HAC)
 2. Provide a justification for the timeframe to meet the HAC

How HAC is Defined?

At federal level:

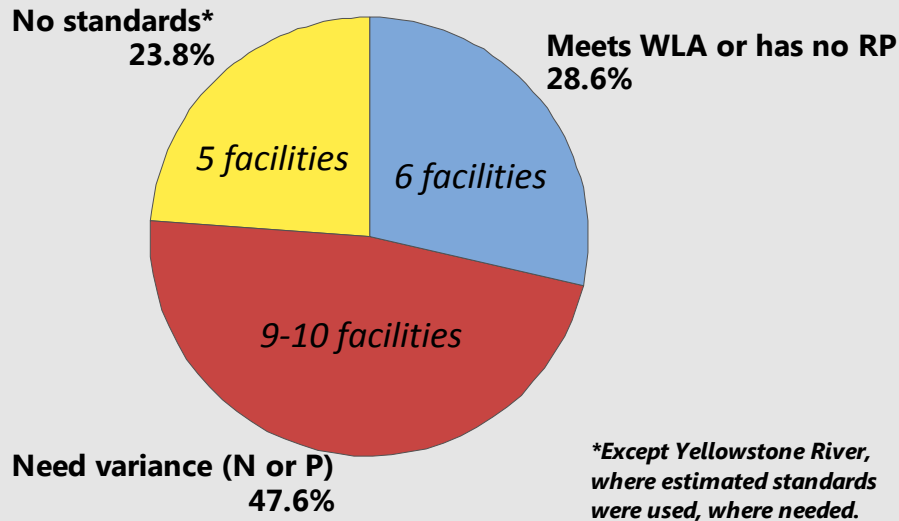
The highest attainable interim criterion *or* the Interim effluent condition that reflects the greatest pollutant reduction achievable

- In Montana, this essentially translates as the highest cost for effluent treatment that can be afforded based on the state's economic affordability process

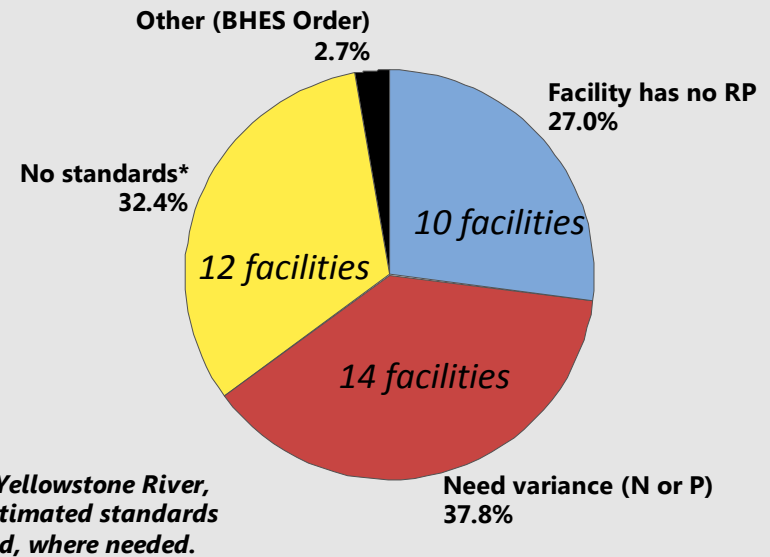
Process DEQ used to ID Potential Group HACs

1. Estimated per-facility cost to upgrade to a range of treatment levels (TetraTech 2016 report)
 - 7 mg TN/L, 0.5 mg TP/L
 - 3 mg TN/L, 0.5 mg TP/L
 - 7 mg TN/L, 0.1 mg TP/L
 - 3 mg TN/L, 0.1 mg TP/L
 - 7 mg TN/L, 0.05 mg TP/L
 - 3 mg TN/L, 0.05 mg TP/L (Wastewater Limits of Technology)
2. Applied DEQ's public-sector affordability tests (from 2014 Guidance) to each community likely to need a variance in each group
3. Compiled results, by group (how many can afford a treatment level, how many cannot?)

≥1MGD Group

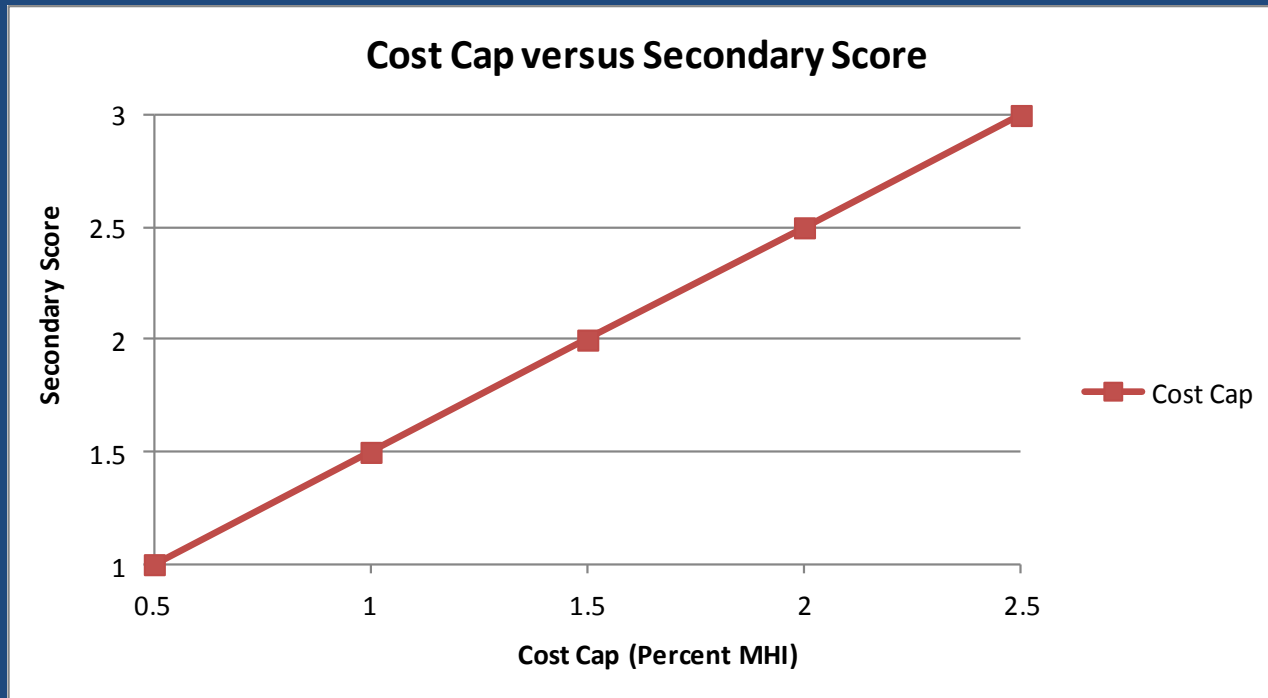


<1MGD Group



Process DEQ used to ID Potential Group HACs

Figure
from
2014 DEQ
Guidance,
Page 7



Example (for a community):

Estimated cost to upgrade to 7 mg TN/L, 0.1 mg TP/L: \$389,927.00

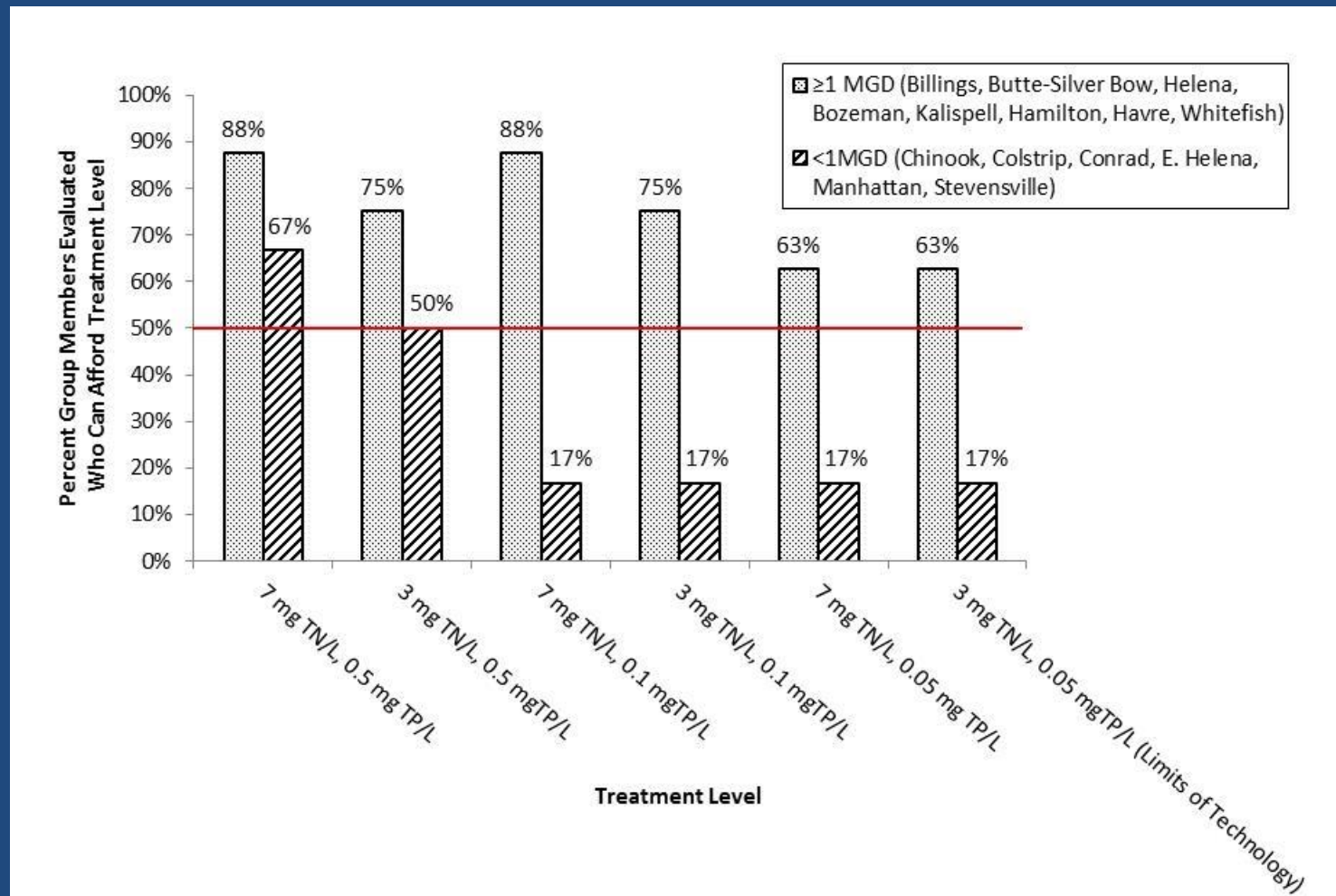
Upgrade cost, as % of MHI (including current sewer bill): 2.28%

Community economic evaluation (i.e., secondary score): 2.6

Cost Cap (per graph, above), as MHI: 2.1%

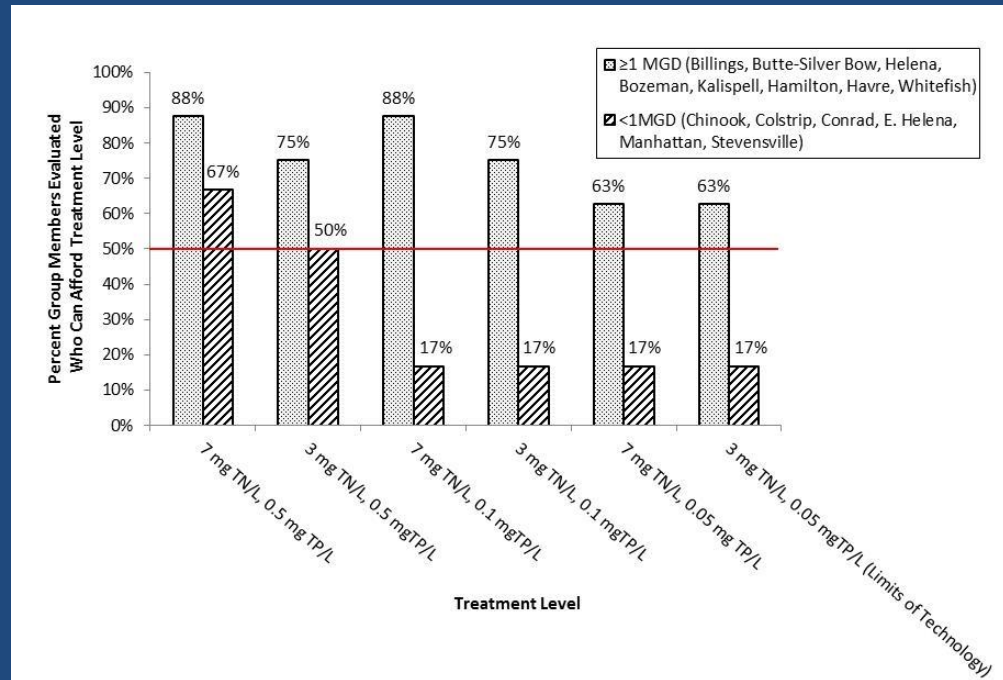
Can treatment level be afforded? NO (2.28% > 2.1%).

Process DEQ used to ID Potential Group HACs



Percent of members in a discharge group (≥ 1 MGD, < 1 MGD) who can affordably meet different wastewater treatment levels, per methods in DEQ Guidance (2014). Only POTWs are shown and, among them, only those that are likely to need a variance.

Identifying Potential Group HACs



Based on majority in each group, candidate HACs could be:

≥ 1 MGD: 3 mg TN/L, 0.05 mg TP/L (*Limits of technology*)

< 1 MGD: 3-7 mg TN/L, 0.5 mg TP/L

However: not always necessary to go to HAC to achieve nutrient standards instream (i.e., in some cases nutrient standards can be met instream at a higher discharge concentration).

Lagoons: Approach for this group still under development...

Table 1. ≥1MGD group.								
			TN (mg/L)			TP (mg/L)		
Permit Number	Permitted Entity	% of Design Flow, 2016	Current Median Discharge Concentration	Median Discharge Conc. that Meets Group's HAC of 3.0 mg TN/L (at Existing % of Design Flow)*	Estimated Average Monthly Limit (AML) that would Meet Numeric Nutrient Standards†	Current Median Discharge Concentration	Median Discharge Conc. that Meets Group's HAC of 0.05 mg TP/L (At Existing % of Design Flow)*	Estimated Average Monthly Limit (AML) that would Meet Numeric Nutrient Standards†
MT0022586	CITY OF BILLINGS	58%	17.3	5.2	0.5	1.9	0.09	1.08
MT0022012	BUTTE SILVER BOW CITY AND COUNTY	66%	2.6	4.5	0.3	2.1	0.08	0.03
MT0022641	CITY OF HELENA	52%	5.6	5.8	0.3	2.4	0.10	0.03
MT0022608	CITY OF BOZEMAN	73%	4.4	4.1	0.3	0.17	0.07	0.04
MT0021938	CITY OF KALISPELL	50%	8.4	6.0	0.275	0.15	0.10	0.025
MT0000256	PHILLIPS 66 BILLINGS REFINERY	n/a (private)	1.45	3.0	1.3	0.3	0.05	0.15
MT0020028	CITY OF HAMILTON	34%	3.1	8.8	4.2	3.4	0.15	1.3
MT0022535	CITY OF HAVRE	77%	7.9	3.9	6.7	1.3	0.07	1.1
MT0020184	CITY OF WHITEFISH	51%	24.2	5.9	1.3	0.5	0.10	0.14

*Variances are only expressed as a load based on design flow; therefore, discharge concentrations can be higher if facility is below design capacity.

†at design flow, per permit rule requirements.

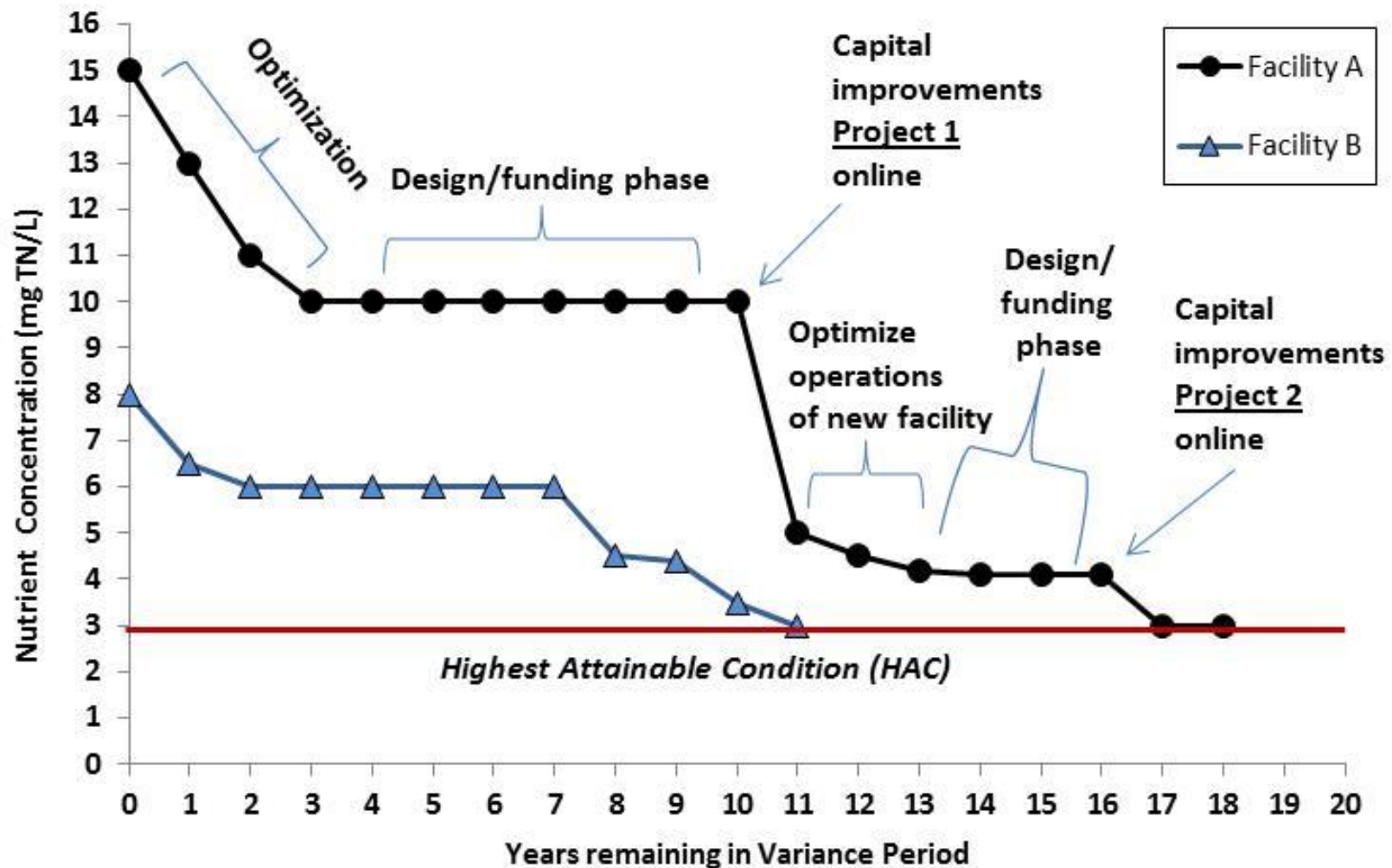
Green: cases where current discharge quality is better than the HAC, or where meeting instream standards will be less stringent than meeting HAC.

HAC Duration (i.e., time to achieve HAC or instream standards)

1. Provide a justification for the timeframe to meet the HAC or standards

- *Next slide...*

Visual Presentation of Narrative Steps (TN example)



Thank You